

The Effects of Massage Therapy & Exercise Therapy on Children/Adolescents with Attention Deficit Hyperactivity Disorder

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Attention Deficit-Hyperactivity Disorder (ADHD) is both a common and disabling disorder. As many as 3-5% of school age children have this disorder, characterized by inattentiveness, impulsivity, and hyperactivity which significantly impairs social, academic, or occupational functioning (Kaplan & Sadock). These patients present frequently to psychiatry for assessment and treatment, and while medications and behaviour modification management help control this disorder, they are not curative. Many parents are seeking alternative therapies for their children, and massage therapy is one such possibility. Massage therapy has been studied in a number of medical and psychiatric illnesses with positive results (American Psychologist, Dec., 1998). A recent study by Field et al 1998, showed massage therapy to decrease fidgeting and improve scores on the Conners Scale (Conners, 1995) in adolescents with ADHD. Massage therapy has also been shown to increase serotonin levels (Field et al 1996, Ironson et al 1996) which might help modulate elevated dopamine levels thought to occur in children with ADHD.

This pilot project had three main objectives: (1) to examine whether massage or exercise therapy would be effective in reducing symptoms or medication dose in attention deficit hyperactivity disorder in school age patients already stabilized on medication and/or behavioural modification; (2) to examine patient and parental compliance with a weekly outpatient clinical session and educational component of daily home-based intervention; (3) to examine the feasibility of using massage and/or exercise therapy with children with ADHD on a larger scale and for a longer period of time.

Methods

Patients previously diagnosed with ADHD, combined type, according to DSM IV criteria who were stabilized on current treatments for the past two months, were randomly assigned to one of three groups: (1) massage therapy, (2) exercise therapy, or (3) control group. All other treatments as prescribed, including outpatient appointments with a primary psychiatrist, social worker and/or psychologist, and medications were continued. All patients were assessed at weeks 0, 6 and 12, by a clinical assessment with the outpatient nurse and a Conners Rating Scale filled out both by the parent and teacher. There was also a questionnaire for patients and families at week 12, and a follow-up phone call to families at week 15. Patients assigned to the control group

continued with their regular treatment and follow-up. Patients assigned to the massage or exercise therapy group were assigned 6 - 20 minute sessions given once weekly for 6 weeks, at the psychiatry outpatient department.

Both the massage and exercise therapy interventions took place with parents attending and with patients attired in the normal school clothes. For the massage therapy interventions, the patients lay prone and supine on a massage therapy table. Massage therapy techniques were adapted to each individual and included Swedish, Craniosacral and Manual Lymph Drainage techniques. The exercise interventions were also tailored to each individual and were classical yoga poses chosen to stretch and relax the whole body. Both groups received a handout describing the interventions, instructions for home care, and a home care calendar to mark each day when they spent five minutes or more doing the intervention with their child. Parents watched the interventions and were instructed on how to perform the massage or help with the exercises at home. Parents in both the massage therapy group and exercise group were given an opportunity each week to practice the techniques before leaving and to ask any questions about what they were doing and how the child was responding.

A follow-up telephone call was made by the outpatient nurse to each family 3 weeks after this study's completion. Three questions were asked: (1) Do you have a particular comment on how we can improve this study? (2) Would you take part in another study such as this? and (3) Was this a positive or negative experience for you and your child?

Unfortunately, due to recruitment issues and 3 drop outs, the sample sizes were small, with 3 in the massage therapy group, 3 in the exercise group, and 4 in the control group.

The Conners Scale used was the short version (Connors), and the clinical assessment done by the outpatient nurse on each patient covered areas such as social functioning, self-control, academic functioning, mood, affect, neurovegetative features, family functioning with respect to child, and medications and other treatments were recorded. Parents were instructed during the last 5 minutes of the exercise and massage therapy groups how to perform either an exercise or a massage therapy technique with their children at home every night for the following week.

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Results

All parents involved in this study indicated that this was a positive experience for them and their children. The Parent Conners Scale also indicates an improvement in the Conners Rating Scale for children in the massage therapy group. (See graph 1-4) These results were not evident however, in the Teacher's questionnaire. We would have liked to have done the 12 week Teacher's Conners Scale, but due to the timing of the study, this was unable to be obtained.

The clinical assessment done by the outpatient nurse illustrated a positive response with both the massage and exercise group. Positive comments reported after 6 weeks in the massage group were better anger control, improvement in mood, more restful sleep and an improvement in social functioning in 2 of the 3 participants, and improvement in focusing at school. All found it relaxing and felt comfortable with the technique. One parent reported a sense of closeness between her and her child. In the exercise group it was reported that there was improvement in the ability to do homework and to cope in stressful situations. Balancing and flexibility had also been noted to be improved.

The overall response from the home record was positive. In the massage group, comments included a sense of closeness between mother and child, more periods of relaxation, and settling better at night. The home record from the exercise group was also positive with reports of improved concentration, balance and flexibility.

The satisfaction questionnaire from the massage therapy group revealed that the experience was an enjoyable one with moderate improvement in behaviour and concentration. The exercise group gave a similar report with findings of improvement in relaxation, flexibility and concentration. Both groups scored an average of 4 out of 5 on their satisfaction questionnaires. The score for the control group was 3.5/5 with moderate enjoyment of the study with an indication that they would have preferred to be in the massage therapy or exercise group. All, however, indicated they would be interested in participating in another similar study.

The follow-up phone call was also very positive in that all families indicated that they would participate in another study such as this and all said that it had positive effects on them and their children.

Overall negative comments were few and included: Massage Group; at home the child was not always compliant and only wanted it done certain times. Exercise Group: the patients didn't like participating with the parents at home and had difficulty holding poses. Also, most parents would like to have had longer teaching sessions.

The percentage of children on Ritalin was 70%. The percentage of children receiving other multidisciplinary interventions such as psychology and social work was 30%.

Discussion

Although the objectives of this project are difficult to comment on due to the small sample size, and thus clinically significant data is lacking, the experience of both the patients and the families was positive. There was also a trend

of improved symptomatology evident within the massage therapy group, coupled with an enthusiasm by the families with regard to this treatment.

The increased scores between the 0 and 6 week Teacher's Conners Scale for the massage and exercise group may indicate an increase in awareness of the teacher on these issues in that particular student. Also a letter from one teacher pointed out that most children tend to be more excited, active and inattentive at the end of the school year. The lack of criticism by patients and families must be tempered with the possibility of participants' reluctance to offend the research team. None of the parents commented on difficulties attending the sessions and there were particularly positive comments for the children in the massage and exercise group stating that the children enjoyed this activity and the parents found this to be of benefit for them. The home record compliance was variable among the participants.

There were a number of difficulties associated with this project. The sample size was small. Initially we thought that it would be relatively easy to recruit a larger number of patients for this study. However, parents' ability to attend regularly became a factor as transportation for families was an issue, which led to the drop out of at least 2 families. Most children who are stabilized on their medication are referred back to their family doctor and thus patients in our practice are usually not yet stabilized. The actual hospital location also changed during the study and may have been disruptive. The 12 week Teacher's Conners Questionnaire could not be done because the school year had ended, as recruitment difficulties led to delay in starting the study. Parents were asked to come to six sessions of either massage or exercise therapy, and most families missed at least 1 to 3 sessions. Although no one commented on this in the follow-up telephone call, 6 sessions may be too many given other commitments that families have.

The massage therapist noticed that the parents in her group expressed a sense of satisfaction in being able to be an active, helpful participant in the treatment of their children. They felt that doing the massage therapy at home gave them a positive physical contact with their children. It was an opportunity to connect with their children in a non-authoritarian, care giving manner.

The exercise therapist noted that the completion of the exercise at home for the parent and child was more challenging for the parent in that they needed to act in a more authoritative role with this intervention. She did note that all children involved in her group were very enthusiastic about the exercise, and said that they enjoyed doing it. Taking into consideration the parent/child interactions observed by the exercise therapist during this intervention, it may be beneficial for the parent to be either actively involved with the exercise, or not present in the room. The exercise therapist went on to suggest that perhaps an exercise group for the children within a hospital setting would be an effective way to help teach the children the yoga exercises with parental involvement. She also noted that one of the children who was also

involved in Tae Kwan Do found the yoga exercises very enjoyable and continued his practice at home.

These encouraging results lead us to feel that there is some promise in this area for further research. We would redesign a future study to focus on an inpatient group where patients do not have to travel to obtain treatment. An alternate option would be to decrease the sessions possibly from 6 massage/exercise sessions to 3 and increase the parental instruction, to address comments made by parents that they would like more time with the hands on instruction.

With mounting parental dissatisfaction being expressed in our clinics, with stimulant medication for children with ADHD, alternative therapies deserve further research.

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